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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,729	12/04/2003	Arthur P. Jost	BCS03157	2296

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Motorola, Inc.
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Schaumburg, IL 60196

EXAMINER

FEATHERSTONE, MARK D

ART UNIT	PAPER NUMBER
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2623

NOTIFICATION DATE	DELIVERY MODE
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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/727,729	Applicant(s) JOST ET AL.	
	Examiner MARK D. FEATHERSTONE	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent; or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, *except* that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English.

2. Claims 1-2, 4, 9-12, 15, 20-21, and 23-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Laksono et al, US PG Pub # 20030046704.

With regard to claim 1, Laksono discloses:

Reserving a predetermined amount of bandwidth in one or more modules of a node group to future transcoding (Figure 1 illustrates a network for a VOD system with multiple connections each containing QAM (item 26, 28, 30, 32), and client devices (representing a node group) connected through the network; [0018], Laksono describes determining if bandwidth exceeds a certain threshold corresponding to a reserve bandwidth [0023]; Laksono describes determining the quantity of video programs currently being supported by the connection of the video system that will need to support the requested video program, corresponding to a multiplexer functionality in the QAM).

Assigning one or more new video sessions to one or more unused slots in each module of the node group until all unreserved bandwidth is allocated ([0018]; Laksono describes

that if the bandwidth utilization is below the threshold, the server will provide the program to the user via the QAM)

Routing one or more subsequent new video sessions through a central decoder after all unreserved bandwidth of a node group is allocated ([0021]; Laksono describes that if the bandwidth utilization exceeds a threshold, the system will provide the user with a list of options, one of which is to receive a transcoded version of the content to lower the bandwidth requirement).

With regard to claims 2 and 4, Laksono discloses the apparatus according to claim

1. Laksono further discloses assigning bandwidth that becomes available from one or more terminated video sessions on a given multiplexer in the node group for use by the central transcoder to form a transcoded group of channels for the given multiplexer ([0026]; Laksono describes that if the bandwidth utilization exceed a second threshold, the server will reclaim the bandwidth from the client devices that elected to receive the stream at the nominal fee, and use for the client devices that elected to receive the program at an increased fee; [0021]; Laksono describes that one of the options of receiving the program at the increased fee is to receive the program transcoded at a reduced bit-rate, therefore, the one or more customers that receive the program this way will form a transcoded group of channels for that connection, as recited in claim 4).

Claims 9-10 are incorporated in claim 1, and are analyzed and rejected as applied.

With regard to claims 11-12, Laksono discloses the method of claim 9 by disclosing assigning new channels to unused slots in the multiplexer until the unreserved

space is filled. Laksono further discloses forming a transcoded group of channels for the multiplexer from bandwidth that becomes available from one or more terminated channels in the multiplexer ([0026]; Laksono describes that if the bandwidth utilization exceed a second threshold, the server will reclaim the channel bandwidth from the client devices that elected to receive the stream at the nominal fee, and use the channel for the client devices that elected to receive the program at an increased fee; [0021]; Laksono describes that one of the options of receiving the program at the increased fee is to receive the program transcoded at a reduced bit-rate, therefore, the one or more customers that receive the program this way will form a transcoded (or compressed, as recited in claim 12, since transcoding in this case refers to lowering the bit rate) group of channels for that connection).

With regard to claim 15, Laksono discloses the method of claim 9. Laksono further discloses expanding an existing transcoded group of channels associated with the multiplexer using bandwidth from one or more terminated channels assigned to the multiplexer ([0026]; Laksono describes that if the bandwidth utilization for a given multiplexer exceed a second threshold, the server will reclaim the channel bandwidth from the client devices that elected to receive the stream at the nominal fee, and use the channel for the client devices that elected to receive the program at an increased fee, the server will continue to do this until the bandwidth utilization is falls below the threshold, thus adding to the transcoded channels each time);

With regard to claim 20, Laksono discloses an apparatus for processing video signals requested by viewers (Figure 1, VOD server 12) comprising:

A central transcoder (Figure 1, item 10; VOD Server and [0021]; Laksono describes a VOD server that transcodes a video program to a lower bit-rate rate and delivers it to a customer if the customer chooses to view the program at a reduced fee, or if the viewer choose to view the program at a reduced fee and not be preempted by another customer)

One or more video servers, each outputting one or more video signals requested by users (Figure 1, item 10 VOD server serving customer devices 26-34)

One or more edge devices, each outputting a node group of signals for transmission to each of the users, wherein each edge device includes one or more multiplexers, and each multiplexer includes a plurality of channel slots (Figure 1, QAM items 26-32 and [0024]; Laksono describes a process where the server determines the bandwidth utilization of each connection. For example, the connection may be supporting 7 video programs out of 11 possible video programs (corresponding to channel slots).

A network coupling the one or more video servers to one or more edge devices and the central transcoder (Figure 1; Laksono describes a connection to each of the QAM edge devices, a network 14 to connect to the client devices, and a QAM 24 used to connect back to the server (where the transcoding takes place) for upstream communication)

A processor assigning each of the one or more video signals output by the one or more servers to one channel slot of the one or more channel slots in one multiplexer of the one or more multiplexers in one edge device of the one or more edge devices (Figure 1, item 34 processing module and [0024]; Server determines the bandwidth utilization of each

connection, and the next video that is determined to be sent via the given QAM and corresponding multiplexer will be restricted).

Reserving a predetermined amount of bandwidth in each of the one or more edge devices to future transcoding (Figure 1 illustrates a network for a VOD system with multiple connections each containing QAM (item 26, 28, 30, 32), and client devices (representing a node group) connected through the network; [0018], Laksono describes determining if bandwidth exceeds a certain threshold corresponding to a reserve bandwidth [0023]; Laksono describes determining the quantity of video programs currently being supported by the connection of the video system that will need to support the requested video program, corresponding to a multiplexer functionality in the QAM)

Assigning one or more new user requested video signals to one or more unused channel slots in a particular multiplexer of the one or more multiplexers of a particular edge device of the one or more edge devices until all unreserved bandwidth is allocated in the particular edge device of the one or more edge devices ([0018], Laksono describes that if the bandwidth utilization is below the threshold, the server will provide the program to the user via the QAM); [0024], Laksono describes if the bandwidth is below the threshold, the request would be processed without restriction)

Routing one or more subsequent new user requested video signals that is designated for a particular edge device of the one or more edge devices through the central transcoder after all unreserved bandwidth of the particular edge device of the one or more edge devices is allocated ([0021]; Laksono describes that if the bandwidth utilization exceeds a

threshold, the system will provide the user with a list of options, one of which is to receive a transcoded version of the content to lower the bandwidth requirement).

With regard to claims 21 and 23, Laksono discloses the apparatus according to claim 20. Laksono further discloses wherein said processor assigns bandwidth associated with a channel slot that becomes available from one or more terminated video sessions on a given multiplexer of the one or more multiplexers in a given edge device of the one or more edge devices for use by the central transcoder to form a transcoded group of channels for the given multiplexer ([0026]; Laksono describes that if the bandwidth utilization exceed a second threshold, the server will reclaim the bandwidth from the client devices that elected to receive the stream at the nominal fee, and use for the client devices that elected to receive the program at an increased fee; [0021]; Laksono describes that one of the options of receiving the program at the increased fee is to receive the program transcoded at a reduced bit-rate, therefore, the one or more customers that receive the program this way will form a transcoded group of channels for that connection, as recited in claim 23).

Claims 24-26 are analyzed and rejected as applied to claim 20.

Claim 27 is analyzed and rejected as applied to claim 21.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5-8 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laksono in view of Levesque et al, US Patent # 7020892.

With regard to claims 5 and 7, Laksono discloses the method according to claim 1 by disclosing routing subsequent streams to a transcoder (when a threshold bandwidth has been reached), however Laksono fails to disclose converting a video session from a non-transcoded service to a transcoded service during a trick play transition.

Levesque describes a system and method for switching to a time shifted version of a video stream. Specifically, Levesque describes switching from a non-transcoded version of a stream to a transcoded version of a stream during a trick-play sequence (Figure 6 Levesque illustrates an uncompressed digital video input 78 that is both output as a real-time output 31 and encoded into compressed frames 84 to form a compressed, time shifted version of the stream; column 3, lines 35-56; Levesque describes that when a user pauses a video and initiates a trick play command, the controller switches the stream from the real-time uncompressed input to the time-shifted input)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the feature of trick play transition from a non-transcoded to transcoded stream as taught by Levesque to the system that transcodes video streams when bandwidth has reached a certain threshold as taught by Laksono. The advantage would have been to reduce bandwidth needed for subsequent video sessions when bandwidth is limited.

With regard to claim 6 and 8, Laksono discloses the method of claim 1 by disclosing routing subsequent streams to a transcoder (when a threshold bandwidth has been reached), however Laksono fails to disclose converting a video session from a transcoded service to a non-transcoded service during a trick play transition. Levesque further discloses this feature (column 3, line 66 – column 4, line 3; Levesque describes switching back to a real-time stream when the viewer requests to view the program in real time, corresponding to a trick play operation. As discussed in the claim 5 & 7 rejection, these trick play operations can include a "pause" operation).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the feature of transitioning from a transcoded to a non-transcoded stream during a trick play session as taught by Levesque to the system of Laksono that transcodes streams when a threshold bandwidth has been reached. The advantage would have been to deliver a higher quality of service to the user if transcoding is not needed. Claims 16-19 are rejected as analyzed with regard to claims 5-8.

5. Claims 3, 13-14, 22, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laksono in view of Krause et al, US Patent # 6996129, hereafter Krause.

With regard to claim 3, Laksono discloses the method according to claim 2 in that he discloses a group of channels on a given multiplexer that are transcoded. Laksono fails to disclose the group of channels is a statistical multiplexed group of channels.

Krause discloses an advanced multiplexer designed for video on demand distribution. Specifically, (column 23, lines 2-11), Krause describes the use of a statistical multiplexer to eliminate the risk of overflowing a QAM channel if the channel

is oversubscribed by using lower the data rate by converting from a constant data rate stream to a constant image quality stream, thereby using less bits when they are not needed.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add a statistical multiplexer as taught by Krause to the system of Laksono that multiplexes video streams in a VOD system. The advantage would have been to save bandwidth by using a variable bit rate stream.

With regard to claims 13-14, Laksono discloses the method of claim 12 in that he discloses creating a compressed group of channels and delivering them to the QAM edge devices. Laksono fails to disclose that these channels can be multiplexed at the server and sent at a constant bit rate to the edge devices.

Krause does disclose multiplexing a group of channels and delivering them at a constant bit rate to be distributed via the network (Figure 1, item 150B multiplexer that receives media from the server 110. Column 8, lines 60-66; Krause discloses that the single VBR streams (as specified in claim 14) are sent to the multiplexer to be multiplexed at a constant bit rate and sent to the modulator).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the feature of Krause of transporting the multiplexed group of channels via constant bit rate to the modulator to the system of Krause that sends programs to a modulator for distribution. The advantage would have been the ability to match the maximum bit rate of the modulator for more efficient distribution.

Claims 22 and 28 are analyzed and rejected as applied to claim 3.

Claims 29-30 are analyzed and rejected as applied to claims 13-14.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK D. FEATHERSTONE whose telephone number is (571)270-3750. The examiner can normally be reached on 8:00 AM - 5:00 PM M-F US Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Koenig can be reached on (571) 272-7296. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

E-Signed

/Mark Featherstone/ - Assistant Examiner

/Andrew Y Koenig/
Supervisory Patent Examiner, Art Unit 2623